



[4910-13]

DEPARTMENT OF TRANSPORTATION

Federal Aviation Administration

14 CFR Part 25

[Docket No. FAA-2012-0812; Amendment No. 25-138]

RIN 2120-AK36

**Requirements for Chemical Oxygen Generators Installed on Transport Category
Airplanes**

AGENCY: Federal Aviation Administration (FAA), DOT.

ACTION: Final rule.

SUMMARY: This final rule amends the type certification requirements for chemical oxygen generators installed on transport category airplanes so the generators are secure and not subject to misuse. This rule increases the level of security for future transport category airplane designs but does not directly affect the existing fleet of those airplanes.

DATES: This action becomes effective [INSERT DATE 60 DAYS AFTER DATE OF PUBLICATION IN THE *FEDERAL REGISTER*].

ADDRESSES: For information on where to obtain copies of rulemaking documents and other information related to this final rule, see “How to Obtain Additional Information” in the SUPPLEMENTARY INFORMATION section of this document.

FOR FURTHER INFORMATION CONTACT: For technical questions concerning this action, contact Jeff Gardlin, Airframe and Cabin Safety Branch, ANM-115, Transport Airplane Directorate, Aircraft Certification Service, Federal Aviation Administration, Northwest Mountain Region, 1601 Lind Avenue SW, Renton, WA 98057-3356; telephone:

(425) 227-2136; e-mail: jeff.gardlin@faa.gov.

For legal questions concerning this action, contact Douglas Anderson, Federal Aviation Administration, Office of the Regional Counsel, ANM-7, Northwest Mountain Region, 1601 Lind Avenue SW, Renton, WA 98057-3356; telephone: (425) 227-2166; e-mail: douglas.anderson@faa.gov.

SUPPLEMENTARY INFORMATION:

Authority for this Rulemaking

The FAA's authority to issue regulations on aviation safety is found in Title 49 of the United States Code. Subtitle I, Section 106 describes the authority of the FAA Administrator. Subtitle VII, Aviation Programs, describes in more detail the scope of the agency's authority.

This final rule is promulgated under the authority described in Subtitle VII, Part A, Subpart III, Section 44701, "General requirements." Under that section, the FAA is charged with promoting safe flight of civil aircraft in air commerce by prescribing minimum standards required in the interest of safety for the design and performance of aircraft; regulations and minimum standards in the interest of safety for inspecting, servicing, and overhauling aircraft; and regulations for other practices, methods, and procedures the Administrator finds necessary for safety in air commerce. This regulation is within the scope of that authority because it revises the safety standards for design and operation of transport category airplanes.

List of Abbreviations and Acronyms Frequently Used in This Document

AD – Airworthiness Directive

ARAC – Aviation Rulemaking Advisory Committee

COG – Chemical Oxygen Generator

LOARC – Lavatory Oxygen Aviation Rulemaking Committee

SFAR – Special Federal Aviation Regulation

I. Overview of Final Rule

This final rule adopts new standards for chemical oxygen generators (COG) installed in transport category airplanes. These new standards, based on the recommendations of the Lavatory Oxygen Aviation Rulemaking Committee (LOARC), pertain to future applications for type certificates, address potential security vulnerabilities with COG installations, and provide performance-based options for acceptable methods of compliance.

II. Background

The FAA became aware of security vulnerabilities with certain types of oxygen systems installed inside the lavatories of most transport category airplanes. To address the underlying security issues, the FAA chartered an aviation rulemaking committee (ARC) to make recommendations regarding new standards for oxygen system installations, as well as how to implement those standards.

Specifically, the LOARC was tasked to:

- Establish criteria for in-service, new production and new type design airplanes, preferably in the form of performance standards, for safe and secure installation of lavatory oxygen systems;
- Determine whether the same criteria should apply to the existing fleet and to new production and type designs;

- Establish what type of safety assessment approach should be used, for example, in accordance with Society of Automotive Engineers (SAE) International Document ARP5577¹ or Title 14, Code of Federal Regulations (14 CFR) 25.1309, as well as define content and procedures of the safety assessment;
- Determine whether tamper resistance, active tamper evidence, or different system design characteristics are equivalent options;
- Develop guidance as necessary to satisfy the recommended criteria for each system design characteristic as appropriate; and
- Consider the advantages and disadvantages of different implementation options and recommend a schedule(s) for implementation.

The LOARC identified five key subjects to focus on to develop its recommendations and fulfill its charter. Those subjects were:

- Design considerations—identifying and characterizing the design constraints and key factors affecting an installation.
- Security standards—identifying the necessary components of a secure installation, in terms of both new designs and for retrofit.
- System performance—identifying the factors that affect system performance in general and how modifications to enhance security might affect system performance.
- Implementation considerations—identifying the major factors to implement the new requirements into the fleet as expeditiously as practicable, as well as assessing how long certain actions will take.

¹ Aerospace Recommended Practice (ARP) 5577, *Aircraft Lightning Direct Effects Certification*, dated September 30, 2002.

- Other affected areas—characterizing the parameters that resulted in the determination of a security vulnerability for lavatory COG installations and establishing criteria for evaluating other installations against those characteristics.

The ARC submitted its recommendations to the FAA. Those recommendations are the basis for these new standards. On January 9, 2013, the FAA published a notice of proposed rulemaking (NPRM), Notice No. 13-01, entitled Requirements for Chemical Oxygen Generators Installed on Transport Category Airplanes in the *Federal Register* (78 FR 1765). The comment period for the NPRM closed on March 11, 2013. Additional background and historical information is contained in the NPRM. (See the docket for this rulemaking at www.regulations.gov.)

III. Discussion of Public Comments and Final Rule

The FAA received comments from four commenters regarding the NPRM for this final rule. Those commenters were the Association of Flight Attendants, The Boeing Company (hereafter referred to as “Boeing”), Bombardier, and an individual commenter.

Support for the NPRM

The Association of Flight Attendants and Bombardier concurred with the proposal without further comment.

Requests to Revise Applicability

Boeing commented that the proposed rule should be limited to lavatory installations and indicated that this would be consistent with the LOARC’s recommendation. We disagree. The LOARC generalized its recommendations to apply to any COG installation. The effect of these new regulations on any given COG installation will vary. For most

interior arrangements, lavatories are the only installation where design changes will be necessary. We did not change this final rule based on this comment.

Boeing proposed that we modify the applicability of the proposed rule to correspond with Airworthiness Directive (AD) 2011-04-09, Amendment 39-16630 (76 FR 12556, March 8, 2011), such that all-cargo airplanes and airplanes operating under Code of Federal Regulations (CFR) parts other than part 121 operations would not be affected. We disagree. While the final rule is intended to address the security of COGs on primarily passenger-carrying airplanes operating under part 121, all types of operations will benefit to some degree. Once installations are defined for an airplane type, the airplane could be operated under any operating regulation and would not require changes. This approach also accommodates future changes in operating requirements by making the COG standards a basic design requirement. Also, § 25.1450 contains a provision that excludes compliance with the new standards for airplanes approved using Special Federal Aviation Regulation (SFAR) 109. We did not change this final rule based on this comment.

An individual commented that the in-service fleet should be modified for any COG installation and not just lavatories. We disagree. The proposed rule did not address in-service airplanes, so adding retrofit requirements would be beyond the scope of the proposal. However, the FAA has taken action to revise COG installations that have a known unsafe condition by issuing AD 2011-04-09, Amendment 39-16630 (76 FR 12556, March 8, 2011) and AD 2012-11-09, Amendment 39-17072 (77 FR 38000, June 26, 2012). If we identify additional unsafe conditions on in-service airplanes, we will issue additional ADs. We did not change this final rule based on this comment.

The same individual also proposed that the requirements apply to newly-produced airplanes, in addition to new type certificates. We disagree. As discussed above, the FAA has already taken action on installations identified as being potentially unsafe. The referenced ADs apply to newly produced airplanes, as well as existing airplanes. This final rule raises the level of safety for future type certificates, but it is not meant to affect current airplanes in production. We did not change this final rule based on this comment.

Request to Revise Economic Analysis

Boeing commented that if the proposed rule applies to all COG installations, the economic analysis was not accurate, since it assumes there will be little cost impact. We disagree. As previously noted, all COG installations are affected by this final rule, but the vast majority of installations will not require any design changes because they are located where it would be immediately obvious if anyone attempted to access them. In those cases, the installation complies with the rule because of its location and would not require any physical changes to the generator or method of installation. In addition, because this rule applies to new applications for type certification, any design changes to existing approaches that might be needed can readily be accommodated during the design process. Therefore, the economic assessment is valid. We did not change this final rule based on this comment.

Boeing also commented that if the requirements of this rule were imposed as a result of § 21.101, the cost ramifications would be more significant and that this was not accounted for in the economic evaluation. We disagree. It is true that these requirements could be imposed on significant product-level design changes. However, as noted in the “Benefits” discussion of the Type Certification Procedures for Changed Products (65 FR

36244, June 7, 2000) final rule, compliance is required with all later regulations where such compliance will materially contribute to the level of safety.

The provisions of § 21.101 do not require compliance with later requirements under specified circumstances. In particular, where the costs involved would not be commensurate with the safety benefit achieved. Therefore, the incremental costs for changed products have already been justified by the benefits and are not attributable to this final rule. Accordingly, no change was made to this final rule as a result of this comment.

Comments on Design Considerations

An individual commented on the detailed technical merits any such system should have, as well as the processes necessary to ensure such systems can be maintained and produced. We agree that most of the comments are worthwhile design considerations, but they are beyond the scope of this rulemaking effort, which defines a minimum performance standard for COG installations. The commenter also addressed the economics of product development and marketing, which is also beyond the scope of the notice. We did not change this final rule based on the individual's comments.

Request to Maintain Paragraph Numbering

Boeing suggested that the current paragraph numbering be maintained in the CFR, such that § 25.795(d) is retained as "exceptions." Boeing suggested this would assist future applicants administratively, since the amendment level would not affect which paragraph contained a requirement. We partially agree. While we understand the reason for the comment, an applicant must always specify the certification basis when applying for a design change, so the paragraph numbering should not be an issue. Furthermore, for

consistency with existing regulations, a paragraph covering exceptions should come after the substantive requirements of the section. We did not change this final rule based on this comment.

IV. Regulatory Notices and Analyses

A. Regulatory Evaluation

Changes to Federal regulations must undergo several economic analyses. First, Executive Order 12866 and Executive Order 13563 direct that each Federal agency shall propose or adopt a regulation only upon a reasoned determination that the benefits of the intended regulation justify its costs. Second, the Regulatory Flexibility Act of 1980 (Public Law 96-354) requires agencies to analyze the economic impact of regulatory changes on small entities. Third, the Trade Agreements Act (Public Law 96-39) prohibits agencies from setting standards that create unnecessary obstacles to the foreign commerce of the United States. In developing U.S. standards, the Trade Act requires agencies to consider international standards and, where appropriate, that they be the basis of U.S. standards. Fourth, the Unfunded Mandates Reform Act of 1995 (Public Law 104-4) requires agencies to prepare a written assessment of the costs, benefits, and other effects of proposed or final rules that include a Federal mandate likely to result in the expenditure by State, local, or tribal governments, in the aggregate, or by the private sector, of \$100 million or more annually (adjusted for inflation with base year of 1995). This portion of the preamble summarizes the FAA's analysis of the economic impacts of this final rule.

Department of Transportation Order DOT 2100.5 prescribes policies and procedures for simplification, analysis, and review of regulations. If the expected cost impact is so minimal that a proposed or final rule does not warrant a full evaluation, this

order permits that a statement to that effect and the basis for it to be included in the preamble if a full regulatory evaluation of the cost and benefits is not prepared. Such a determination has been made for this final rule. The reasoning for this determination follows:

This final rule adopts new standards for future type certificate applications pertaining to COGs installed on transport category airplanes. The new standards are intended to eliminate potential security vulnerabilities. Consequently, the primary benefit of this rule is that air carriers may continue to provide supplemental oxygen to individuals in lavatories during emergencies while ensuring that individuals in lavatories cannot tamper with the supplemental oxygen system.

The rule will affect future certifications, but as the newest certificated airplanes are in compliance with this final rule, these costs are expected to be minimal. The Boeing Model 787 and the Airbus A350 established an acceptable design, or received type certification between 3 and 5 years ago (hence predating this rule). The FAA expects that these systems can be incorporated into future type certificated airplanes at a minimal cost.

Secondly, the “newer” oxygen systems (such as those on the Boeing Model 787 and the Airbus A350) are cost efficient in comparison to the more traditional COGs.² The “newer” systems weigh less and deliver oxygen more effectively than the traditional COGs. The lesser weight of the materials used to construct the newer systems, combined with a reduction in the amount of oxygen required per passenger, translates into fuel cost savings over an airplane’s lifespan.

² <http://www.businesswire.com/news/home/20050518005123/en/Boeing-Selects-Aerospaces-Pulse-Oxygen-System-Outfit>.

The design standards for secure oxygen systems apply to future transport category airplane type certificates only. Airplanes currently in production, or already in the existing fleet, are excluded from this rule. Thus, there are no costs to the existing fleet or airplanes in production.

For these reasons this final rule is expected to have a minimal impact with positive net benefits, and a regulatory evaluation was not prepared. The FAA has therefore determined that this final rule is not a “significant regulatory action” as defined in section 3(f) of Executive Order 12866, and is not “significant” as defined in DOT’s Regulatory Policies and Procedures.

B. Regulatory Flexibility Determination

The Regulatory Flexibility Act of 1980 (Public Law 96-354) (RFA) establishes “as a principle of regulatory issuance that agencies shall endeavor, consistent with the objectives of the rule and of applicable statutes, to fit regulatory and informational requirements to the scale of the businesses, organizations, and governmental jurisdictions subject to regulation.” To achieve this principle, agencies are required to solicit and consider flexible regulatory proposals and to explain the rationale for their actions to assure that such proposals are given serious consideration.” The RFA covers a wide-range of small entities, including small businesses, not-for-profit organizations, and small governmental jurisdictions.

Agencies must perform a review to determine whether a rule will have a significant economic impact on a substantial number of small entities. If the agency determines that it will, the agency must prepare a regulatory flexibility analysis as described in the RFA.

However, if an agency determines that a rule is not expected to have a significant economic impact on a substantial number of small entities, section 605(b) of the RFA provides that the head of the agency may so certify and a regulatory flexibility analysis is not required. The certification must include a statement providing the factual basis for this determination, and the reasoning should be clear.

The Small Business Administration (SBA) small-entity size standard for aircraft manufacturers is 1,500 employees or less. No U.S. manufacturers of transport category airplanes are small entities; thus, this final rule will not affect small entities, and a regulatory flexibility analysis was not prepared.

If an agency determines that a rulemaking will not result in a significant economic impact on a substantial number of small entities, the head of the agency may so certify under section 605(b) of the RFA. Therefore, as provided in section 605(b), the head of the FAA certifies that this rulemaking will not result in a significant economic impact on a substantial number of small entities.

C. International Trade Impact Assessment

The Trade Agreements Act of 1979 (Public Law 96-39), as amended by the Uruguay Round Agreements Act (Public Law 103-465), prohibits Federal agencies from establishing standards or engaging in related activities that create unnecessary obstacles to the foreign commerce of the United States. Pursuant to these Acts, the establishment of standards is not considered an unnecessary obstacle to the foreign commerce of the United States, so long as the standard has a legitimate domestic objective, such as the protection of safety, and does not operate in a manner that excludes imports that meet this objective. The statute also requires consideration of international standards and, where

appropriate, that they be the basis for U.S. standards. The FAA has assessed the potential effect of this final rule and determined that it would improve a safety objective and therefore is not considered an unnecessary obstacle to international trade.

D. Unfunded Mandates Assessment

Title II of the Unfunded Mandates Reform Act of 1995 (Public Law 104-4) requires each Federal agency to prepare a written statement assessing the effects of any Federal mandate in a proposed or final agency rule that may result in an expenditure of \$100 million or more (in 1995 dollars) in any one year by State, local, and tribal governments, in the aggregate, or by the private sector; such a mandate is deemed to be a “significant regulatory action.” The FAA currently uses an inflation-adjusted value of \$143.1 million in lieu of \$100 million. This final rule does not contain such a mandate; therefore, the requirements of Title II of the Act do not apply.

E. Paperwork Reduction Act

The Paperwork Reduction Act of 1995 (44 U.S.C. 3507(d)) requires that the FAA consider the impact of paperwork and other information collection burdens imposed on the public. The FAA has determined that there is no new requirement for information collection associated with this final rule.

F. International Compatibility and Cooperation

In keeping with U.S. obligations under the Convention on International Civil Aviation, it is FAA policy to conform to International Civil Aviation Organization (ICAO) Standards and Recommended Practices to the maximum extent practicable. The FAA has reviewed the corresponding ICAO Standards and Recommended Practices and has identified no differences with these regulations.

Executive Order 13609, Promoting International Regulatory Cooperation, promotes international regulatory cooperation to meet shared challenges involving health, safety, labor, security, environmental, and other issues and to reduce, eliminate, or prevent unnecessary differences in regulatory requirements. The FAA has analyzed this action under the policies and agency responsibilities of Executive Order 13609, and has determined that this action would have no effect on international regulatory cooperation.

G. Environmental Analysis

FAA Order 1050.1E identifies FAA actions that are categorically excluded from preparation of an environmental assessment or environmental impact statement under the National Environmental Policy Act in the absence of extraordinary circumstances. The FAA has determined this rulemaking action qualifies for the categorical exclusion identified in paragraph 312f and involves no extraordinary circumstances.

V. Executive Order Determinations

A. Executive Order 13132, Federalism

The FAA has analyzed this final rule under the principles and criteria of Executive Order 13132, Federalism. The agency determined that this action will not have a substantial direct effect on the states, or the relationship between the federal government and the states, or on the distribution of power and responsibilities among the various levels of government, and, therefore, does not have Federalism implications.

B. Executive Order 13211, Regulations that Significantly Affect Energy Supply, Distribution, or Use

The FAA analyzed this final rule under Executive Order 13211, Actions Concerning Regulations that Significantly Affect Energy Supply, Distribution, or Use

(May 18, 2001). The agency has determined that it is not a “significant energy action” under the executive order and it is not likely to have a significant adverse effect on the supply, distribution, or use of energy.

VI. How to Obtain Additional Information

A. Rulemaking Documents

An electronic copy of a rulemaking document may be obtained by using the Internet —

1. Search the Federal eRulemaking Portal (<http://www.regulations.gov>);
2. Visit the FAA’s Regulations and Policies Web page at http://www.faa.gov/regulations_policies/ or
3. Access the Government Printing Office’s Web page at <http://www.gpo.gov/fdsys/>.

Copies may also be obtained by sending a request (identified by amendment or docket number of this rulemaking) to the Federal Aviation Administration, Office of Rulemaking, ARM-1, 800 Independence Avenue SW., Washington, D.C. 20591, or by calling (202) 267-9680.

B. Comments Submitted to the Docket

Comments received may be viewed by going to <http://www.regulations.gov> and following the online instructions to search the docket number for this action. Anyone is able to search the electronic form of all comments received into any of the FAA’s dockets by the name of the individual submitting the comment (or signing the comment, if submitted on behalf of an association, business, labor union, etc.).

C. Small Business Regulatory Enforcement Fairness Act

The Small Business Regulatory Enforcement Fairness Act (SBREFA) of 1996 requires FAA to comply with small entity requests for information or advice about compliance with statutes and regulations within its jurisdiction. A small entity with questions regarding this document, may contact its local FAA official, or the person listed under the FOR FURTHER INFORMATION CONTACT heading at the beginning of the preamble. To find out more about SBREFA on the Internet, visit http://www.faa.gov/regulations_policies/rulemaking/sbre_act/.

List of Subjects in 14 CFR Part 25

Aircraft, Aviation safety, Reporting and recordkeeping requirements.

The Amendments

In consideration of the foregoing, the Federal Aviation Administration amends chapter I of Title 14, Code of Federal Regulations as follows:

PART 25—AIRWORTHINESS STANDARDS: TRANSPORT CATEGORY AIRPLANES

1. The authority citation for part 25 continues to read as follows:

Authority: 49 U.S.C. 106(g), 40113, 44701, 44702 and 44704.

2. Amend § 25.795 by redesignating paragraphs (d) and (e) as (e) and (f) respectively, and by adding a new paragraph (d) to read as follows:

§ 25.795 Security considerations.

* * * * *

(d) Each chemical oxygen generator or its installation must be designed to be secure from deliberate manipulation by one of the following:

- (1) By providing effective resistance to tampering,
- (2) By providing an effective combination of resistance to tampering and active tamper-evident features,
- (3) By installation in a location or manner whereby any attempt to access the generator would be immediately obvious, or
- (4) By a combination of approaches specified in paragraphs (d)(1), (d)(2) and (d)(3) of this section that the Administrator finds provides a secure installation.

* * * * *

3. Amend § 25.1450 by adding a new paragraph (b)(3) to read as follows:

§ 25.1450 Chemical oxygen generators.

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- (b) * * *
- (3) Except as provided in SFAR 109, each chemical oxygen generator installation must meet the requirements of § 25.795(d).

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Issued under authority provided by 49 U.S.C. 106(f), 44701(a), and 44703 in Washington, D.C., on February 19, 2014.

Michael P. Huerta
Administrator

[FR Doc. 2014-05291 Filed 03/10/2014 at 8:45 am; Publication Date: 03/11/2014]